REMARKS

The above-identified application is United States application serial number 10/697,821 filed on October 29, 2003. Claims 1-25 are pending in the application. Claims 1-25 are rejected.

Rejection of Claims under 35 U.S.C. §112

Claims 1, 10, 18 and 24-25 are rejected under 35 U.S.C. §112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Applicants traverse the rejection because the claims are definite as stated. The Examiner inquires how storage with long-term persistence capability can be used for temporary storage. Nothing prevents storage devices with long-term storage capability to be used for temporary storage tasks, if desired. Applicants also amend the claims to further specify usage of the hierarchically inferior storage.

Rejection of Claims under 35 U.S.C. §101

Claims 1-25 are rejected under 35 U.S.C. §101 because the claims are directed to a non-statutory subject matter, specifically, the claims are not directed towards the final result that is "useful, tangible and concrete". Applicants have amended the claims to clearly identify a concrete, useful, and tangible result in which the controller allocates hierarchically inferior storage for temporary storage, unexpected mission-critical storage, and hierarchical storage management (HSM)-type low usage data storage.

Regarding the rejection of Claim 24, applicants have amended Claim 24 to specify "a tangible computer-readable medium having a program code embodied therein for execution on a controller," limiting subject matter to tangible article of manufacture embodiments. The amended claim thus avoids the issue of application to electromagnetic signals which is irrelevant in the amended claims since program code that is supplied via electromagnetic signals is embodied in a tangible computer-readable medium albeit either local to or remote from the controller.

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Rejection of Claims under 35 U.S.C. §102

Claims 1-5 and 10-13, 18-22 and 24-25 are rejected under 35 U.S.C. §102(e) as being anticipated by Matsunami et al. (US Patent No. 6,810,462). Applicants have amended the claims. Claims 1-5, 10-13, and 24-25 distinguish over Matsunami et al which does not disclose "storage devices of at least three different and distinct controller-to-storage device bus interface technology types" and a "controller [that] allocates hierarchically inferior storage for temporary storage, unexpected mission-critical storage, and hierarchical storage management (HSM)-type low usage data storage." Claims 18-22 distinguish over Matsunami et al which does not disclose a "disk array containing an hierarchy of disk adapters and coupled storage disks of at least two different and distinct controller-to-storage device interface technology types" or a "controller [that] allocates hierarchically inferior storage for temporary storage, unexpected mission-critical storage, and hierarchical storage management (HSM)-type low usage data storage." The different technologies disclosed by Matsunami et al do not relate to multiple "controller-to-storage device bus interface technology types" but rather to "block I/O" and "file I/O" protocols that are respectively used to communicate with disks or files, as described specifically in column 3, lines 42-47. Furthermore, Matsunami et al is silent with respect to "allocate[ing] hierarchically inferior storage for temporary storage, unexpected mission-critical storage, and hierarchical storage management (HSM)-type low usage data storage."
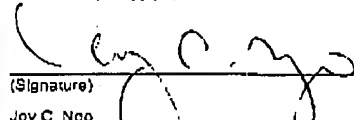
Rejection of Claims under 35 U.S.C. §103

Claims 6-9, 14-17 and 23 are rejected under 35 U.S.C. §103 (a) as being unpatentable over Matsunami et al. (6,810,462) in view of Michael T. Lobue (Michael T. Lobue., Surveying Today's Most Popular Storage Interfaces, 12-2002, IEEE, 0018-9162, page 48-55). Applicants have amended and traverse rejection of the claims. Claims 6-9, 14-17, and 23 distinguish over Matsunami et al in view of Lobue because the combined references to not disclose "storage devices of at least three different and distinct controller-to-storage device bus interface technology types" and a "controller [that] allocates hierarchically inferior storage for temporary storage, unexpected mission-critical storage, and hierarchical storage management (HSM)-type low usage data storage."

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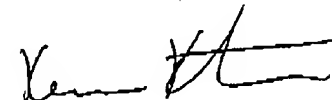
CONCLUSION

The application, including all remaining Claims 1-25, is believed to be in condition for allowance and a notice to that effect is solicited. Nonetheless, should any issues remain that might be subject to resolution through a telephonic interview, the examiner is requested to telephone the undersigned at (949) 251-0250.

I hereby certify that this correspondence is being facsimile transmitted to the USPTO; Central Number at (571) 273-8300 on the date shown below:

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(Signature)

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Respectfully submitted,

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